PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Date: March 15, 2004

Docket No.: 032026:0777

For: **GUIDED SELF-ASSEMBLY OF BLOCK COPOLYMER FILMS ON INTERFEROMETRICALLY NANOPATTERNED SUBSTRATES**

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sirs:

With respect to the examination of the accompanying application, which is a divisional of pending application SN 09/971,442 (Group Art Unit 1756, Examiner D. Chacko Davis) applicants cite the following documents. These documents are also listed on an accompanying Form PTO-1449. These documents are of record in prior application SN 09/971,442. The Office is requested to contact applicants' undersigned attorney if copies of any of these documents are needed.

U.S. PATENTS

Inventor(s)	Patent No.	Issue Date
Cash, Jr.	6,195,410	February 27, 2001

OTHER DOCUMENTS

T.A. Savas, et al., "Achromatic Interferometric Lithography for 100-nm-Period Gratings and Grids," J. Vac. Sci. Technol. B, Vol. 13, No. 6, Nov./Dec., 1995, pp. 2732-2735.

T.A. Savas, et al., "Large-Area Achromatic Interferometric Lithography for 100 nm Period Gratings and Grids," J. Vac. Sci. Technol. B, Vol. 14, No. 6, Nov./Dec., 1996, pp. 4167-4170.

P. Mansky, et al., "Ordered Diblock Copolymer Films on Random Copolymer Brushes," Macromolecules, Vol. 30, 1997, pp. 6810-6813.

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Miri Park, et al., "Block Copolymer Lithography: Periodic Arrays of $\sim 10^{11}$ Holes in 1 Square Centimeter," Science, Vol. 276, No. 5317, 30 May 1997, pp. 1401-1404.

Hideaki Yokoyama, et al., "Structure and Diffusion of Asymmetric Diblock Copolymers in Thin Films: A Dynamic Secondary Ion Mass Spectrometry Study," Macromolecules, Vol. 31, 1998, published on web 11/20/98, pp. 8826-8830.

Wieland Schöllkopf, et al., "A Cluster Size Nanofilter with Variable Openings Between 2 and 50 nm," J. of Chemical Physics, Vol. 109, No. 21, 1 December 1998, pp. 9252-9257.

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V.Y. Banine, et al., "Comparison of Extreme Ultraviolet Sources for Lithography Applications," Micorelectronic Engineering, Vol. 53, 2000, pp. 681-684.

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Alexander C. Edrington, et al., "Polymer-Based Photonic Crystals," Advanced Materials, Vol. 13, No. 6, March 16, 2001, pp. 421-425.

C.T. Black, et al., "Integration of Self-Assembled Diblock Copolymers for Semiconductor Capacitor Fabrication," Applied Physics Letters, Vol. 79, No. 3, 16 July 2001, pp. 409-411.

A. Yen, et al., "Achromatic Holographic Configuration for 100-nm-Period Lithography," Applied Optics, Vol. 31, No. 22, August 1, 1992, pp. 4540-4545.

H.H. Solak, et al., "Exposure of 38 nm Period Gratings Patterns with Extreme Ultraviolet Interferometric Lithography," Applies Physics Letters, Vol. 75, 1999, pp. 2328-2330.

Yang, X. M. *et al.*, "Patterning of self-assembled monolayers with lateral dimensions of 0.15 μm using advanced lithography," *J. Vac. Sci. Technol. B*, 17(6), Nov/Dec 1999, pp. 3203-3207; published by American Vacuum Society.

Peters, R. D. *et al.*, "Combining advanced lithographic techniques and self-assembly of thin films of diblock copolymers to produce templates for nanofabrication," *J. Vac. Sci. Technol. B*, 18(6), Nov/Dec 2000, pp. 3530-3534; published by American Vacuum Society.

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Wang, Q. *et al.*, "Monte Carlo simulations of diblock copolymer thin films confined between two homogeneous surfaces," *Journal of Chemical Physics*, 112(1), 1 January 2000; published by American Institute of Physics.

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Nath, S. K. *et al.*, "Density functional theory of molecular structure for thin diblock copolymer films on chemically heterogeneous surfaces," *Journal of Chemical Physics*, 110(15), 15 April 1999; published by American Institute of Physics.

Solak, H. H. *et al.*, "EUV Interferometric Lithography for Resist Characterization," SPIE, Vol. 3676, Santa Clara, California, March 1999.

REMARKS

The foregoing documents relate generally to interferometric lithography techniques and diblock copolymer films. The paper by Binine, et al. discusses extreme ultraviolet sources that may be used for lithography applications.

It is thus requested that the foregoing documents be considered during examination of the accompanying application and be made of record therein.

Respectfully Submitted,

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Form PTO-1449 (MODIFIED)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 032026:0777	SERIAL NO.
INFORMATION DISCLOSURE CITATION		APPLICANT Paul F. Nealey, et al.	
Submitted: March 15, 2004 *(Use several sheets if necessary)*		FILING DATE	GROUP ART UNIT

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION YES	TRANSLATION NO

OTHER DOCUMENTS *(Including Author, Title, Date, Pertinent Pages, Etc.)*

		T.A. Savas, et al., "Achromatic Interferometric Lithography for 100-nm-Period Gratings and Grids," J. Vac. Sci. Technol. B, Vol. 13, No. 6, Nov./Dec., 1995, pp. 2732-2735.
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EXAMINER	**DATE CONSIDERED**

* **EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include any copy of this form with next communication to applicant.**

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